SCIENTIFIC SERIALS

Poggendorff's Annalen der Physik und der Chemie. No. 3, 1873.—This number commences with a paper by Dr. Oudemans, jun., on the influence of optically inactive solvents on the rotatory power of optically active substances. The author, employing a Wild polaristrobometer and lime-light, experimented with cane-sugar, cinchonin, brucin, phlorizin, and other substances, with water, chloroform, alcohol, ether, &c., as solvents. He unexpectedly found that the specific rotatory power of cinchonin in various mixtures of alcohol and chloroform had not values entirely intermediate between those of cinchonin in either solvent separately (which are ↥ 212° and ↥ 228°). It rises to a maximum of over ↥ 237° in a mixture of 10 per cent. alcohol and 90 per cent. chloroform. He further compared the influence of different solvents on the specific rotatory power of active substances, with their solvent action, and he considers the greater values of the former property correspond with a greater solubility of the active substance. The numerical results are given in full.—Julius Thomsen continues his "Thermochemische Untersuchungen," examining, in this paper, the affinities of the constituents of water, of sulphuretted hydrogen, of ammonia, and of carburetted hydrogen. He finds that while there is development of heat in the formation of marsh gas, there is absorption in the formation of ethylene and acetylene, from carbon and hydrogen. The author gives a *résumé* of results from the series of researches here terminated (the affinity of hydrogen to the metalloids), which presents some points of considerable interest.—In the next paper Prof. Lubimoff of Moscow calls attention to an error current in most text-books on physics. The field of view in a Galilean telescope is stated to depend on the size of pupil of the observer's eye, and to be measurable by the angle under which this will appear from the centre of the object-glass. This, he says, gives a value five or six times smaller than the actual, which is directly dependent on the size of aperture of the object-glass. He explains and illustrates his new theory at some length.—F. Rüdorff contributes the first part of a paper on the solubility of saline mixtures, and Ed. Ketteler continues his mathematical inquiry into the influence of astronomical motions on optical phenomena.—Among the extracted papers may be specified those by Edlund on galvanic resistance, by Braun on direct photography of the solar protuberances, and by Baumhauer on hygrometry in meteorological observatories.

Der Naturforscher for April 1873, contains a large amount of varied and interesting scientific matter. In Physics and Chemistry, there are short accounts of M. Jamin's researches on condensation of magnetism, Dr. Mayer's on measurement of sound, M. Cornu's new method of determining the velocity of light, Herr Feddersen's paper on thermo-diffusion of gases, Herr Nasse's on the nitrogen in albumenoids, Clerk-Maxwell's lecture on action at a distance, &c. Herr Nasse finds that, in the albumen-molecule, one portion of the nitrogen is combined loosely, another much more intimately, and he sets himself to determine the proportion of loosely-combined to the entire nitrogen-contents, in various albuminous substances. His observations have an important physiological bearing. In biology proper, we may note a paper giving the results of Herr Stohmann's recent study on animal nutrition. This author endeavours to formulate mathematically the digestibility of food stuffs. P. Secchi's recent communication on the solar protuberances and spots is given, and there is a meteorological paper on the temperature of air in woods and in the open, describing experiments by Herr Ebermayer. We may further call attention to a note on Baranetzky's experiments on the periodicity of outflow of sap in plants, a phenomenon he finds based on the periodical action of light. Geology, geography, technology, &c., are also represented in this serial, and the weekly "Kleinere Mittheilungen" furnish a number of well-selected scientific data.

SOCIETIES AND ACADEMIES

LONDON

Geological Society, May 14.—Mr. Joseph Prestwich, F.R.S., vice-president, in the chair.—The following communications were read.—"On the genus *Palæocoryne*, Duncan and Jenkins, and its affinities," by Prof. P. Martin Duncan, F.R.S.—In this paper the author referred to certain minute fossils from the Carboniferous rocks of Scotland, described by himself and Mr. Jenkins in a paper read before the Royal Society, as belonging to the Hydroida, and most nearly resembling the recent genus *Bimeria*, Wright. He stated that numerous specimens since received threw some further light on the nature of these fossils, and showed especially that in all probability the base is not really cellular, but that the cellular appearance is produced by the growth of the real base of the polype over the cells of the *Fenestella* on which it grows.—"Notes on Structure in the Chalk of the Yorkshire Wolds," by Mr. J. R. Mortimer.—In this paper the author described a peculiar structure observable in chalk from Yorkshire and elsewhere, giving it a striated appearance. This structure had been ascribed by Dr. Mackie and others to slickensides. The author adduced reasons for doubting the mechanical origin of these striations, and argued that they are of an organic nature. He ascribed them to corals, and remarked that similar striæ occur in all limestone formations.—"On *Platysiagum sclerocephalum* and *Palæospinax priscus*, Egerton," by Sir P. de M. Grey-Egerton, Bart., M.P., F.R.S.—The two species of fossil Fishes noticed in this paper were described by the author in the 13th Decade of the Memoirs of the Geological Survey, published in 1872. They are both from the Lias of Lyme Regis. He now described some new specimens which add to our knowledge of their characters. An example of *Platysiagum* shows the position of the dorsal fin, which is placed very far back, occupying a place opposite to the interval between the ventral and anal fins, and the form of the trunk, which is of nearly uniform depth from the occiput to the base of the dorsal fin. The structure of the dorsal fin was described in detail. The new specimen of *Palæospinax priscus* shows especially the position of the second dorsal spine, which is placed over the 50th vertebra, the first being on the 16th, the fish thus most nearly approaching the existing *Cestracion*, which it also resembles in its dentition. In other respects it seemed to be most clearly allied to *Acanthias*.—"On a new genus of Silurian Asteriadæ," by Mr. Thomas Wright, F.R.S.E.—The specimen described showed the outline of a small Starfish, with a large disc and short rays, in a slab of Wenlock Limestone from Dudley. The outline of the ten rays was described as marked out by the border of small triangular spines, the other plates of the disc and rays being absent. Each ray was terminated by a stemlike multiarticulate process as long as the ray, from towards the extremity of which spring slender lateral processes, giving it a tufted appearance. This Starfish, which is in the collection of Dr. Grindrod, is named by the author *Trichotaster plumiformis*.

Zoological Society, May 20.—Dr. E. Hamilton, vice-president, in the chair.—Lord Arthur Russell exhibited specimens of, and made remarks upon, the different varieties of the Carp (*Cyprinus carpio*) cultivated in the German fish-ponds.—Mr. Sclater offered some remarks upon the most interesting animals observed in the Gardens of some of the continental Zoological Societies which he had lately visited.—Dr. E. Hamilton read a note confirmatory of the extraordinary fecundity of the Chinese Water-Deer (*Hydropotes inermis*).—Mr. H. E. Dresser exhibited some rare birds from the Ural, amongst which were the Smew (*Mergus albellus*) in down, nestlings of the Rustic Bunting (*Emberiza rustica*) and several specimens of Lilljeborg's *Salicaria magnirostris*, which last he believed to be identical with *Acrocephalus dumetorum* of India.—Sir Victor Brooke, Bart., read a paper on the African Buffaloes, which he considered might be reduced into two species, *Bubalus caffer* and *Bubalus pumilus*. Of these the latter exhibited two varieties in the western and eastern points of its range, while the former appeared to extend from the Cape up the eastern coast to Abyssinia without any material variation.—Mr. St. George Mivart, F.R.S., read a memoir on *Lepilemur*, *Cheirogaleus*, and other Lemurine forms, to which were appended remarks on the Zoological rank of the Lemuroidea in the natural system.—Messrs. Sclater and Salvin communicated a paper on some Venezuelan Birds collected by Mr. James M. Spence, amongst which were examples of two species believed to be new to science, and proposed to be called *Lochmias sororia* and *Crypturus cerviniventris*.—A communication was read from Mr. R. Swinhoe, on the White Stork of Japan, which he referred to a species different from the *Ciconia alba* of Europe, and proposed to call *C. boyciana*.—Mr. H. E. Dresser read some notes on certain oriental species of Eagles (*Aquila*).

Royal Horticultural Society, May 16.—General meeting,—Viscount Bury, M.P., president, in the chair.—The resignation of the Assistant-Secretary was announced.—The Rev. M. J. Berkeley, who was then called to the chair, commented on the

© 1873 Nature Publishing Group

plants of interest exhibited. He called attention to specimens of *Cytisus Adami*, believed to be a graft-hybrid, which bears upon the same branches, besides its own proper intermediate flowers, the dissociated very distinct flowers of its parents.—*Tillandsia ionantha* and a large flowering specimen of *Cycas revoluta* were also alluded to.

Scientific Committee.—Dr. J. D. Hooker, F.R.S., C.B., in the chair.—Mr. Anderson-Henry sent cuttings from black currant bushes, the buds of which were swollen to an unusual size, but abortive. This was due to the presence of a four-legged acaroid, similar to those on lime and hazel. In gardens near Greenock it was seriously affecting the cultivation of the fruit; it is believed there to have been imported with plants obtained from the Low Countries.—A letter from Mr. Andrew Murray to Mr. Berkeley was read, dated Salt Lake City. He sent an *Oscillatoria*, which he had found in a hot sulphuretted spring; also specimens of a *Nostoc*, with very large-celled chains, which blackened the stones in the brooks.—Dr. Masters called attention to a mode of propagating the vine described by M. Rivière. Cuttings were planted vertically in the ground in the spring, the uppermost bud being completely covered with 3 to 4 inches of soil.

Edinburgh

Royal Society, May 19.—Memoir on the placentation of the sloths, by Prof. Turner. After referring to the absence of any definite information on this subject in anatomical literature, the author described his dissection of the gravid uterus of a specimen of that species of two-toed sloth, which Peters has named *Choloepus Hoffmanni*. His specimen was perfectly fresh when it came into his possession, and he had succeeded in obtaining satisfactory injections both of the fœtal and maternal systems of blood-vessels. His dissections have led to the following conclusions:—The placenta of the sloth is not cotyledonary, in the sense in which the term is employed to express the non-deciduate placenta sub-divided into distinct and scattered masses, as in the ruminants. In the fullest sense of the word it is a deciduate placenta. If the inference which has been drawn from Sharpey's observations on the placenta in *Manis*, viz. that it is non-deciduate, be correct, then it is clear, if any value is to be attached to the placental system of classification, that the scaly ant-eaters can no long be regrouped along with the sloths in the order Edentata, which order must therefore be broken up. The memoir concluded with some remarks on the affinities, as regards their placental form and structure, of the sloths to the other deciduate mammals.

Paris

Academy of Sciences, May 19.—M. de Quatrefages, president, in the chair.—The following papers were read.—A note on solar cyclones, with an answer, by S. Respighi to M. Vicaire and Father Secchi, by M. Faye. M. Vicaire in his late critique on M. Faye's solar spot theory had asked how that author could compare the barometric depressions in terrestrial cyclones which only amount to a few millimetres of mercury with the enormous lowerings of the chromosphere which ought to take place on the solar spots but which are inadmissible. M. Faye now replied that these depressions are *facts* long and carefully observed by Respighi, and quoted a letter from him on the subject. With regard to Secchi's assertion that Respighi had been deceived by the small size of his telescope (4½ inches aperture) he pronounced the objection utterly invalid, for, whatever might be the shortcomings of the telescope as regards minute details, it could never make the chromosphere appear very low where it was in reality very high.—Note on the mechanical properties of different bronzes, by M. Tresca.—Hydrologic studies of the Seine Part II., Agricultural applications, by M. Belgrand.—On the part played by the substratum in the distribution of rock lichens, by M. Weddell.—New observations on metallic deposits on zinc, &c., and a new heliographic process, by M. C. Gourdon.—On an electro-diapason of continuous movement, by M. E. Mercadier.—On an electro-dynamic experiment, by MM. G. Planté and Alf. Niaudet-Breguet.—On the action of dry ammonia gas on ammonic nitrate, by M. F. M. Raoult. The author found that the liquid produced by the action varies in composition with the temperature. At – 10° C., 100 grammes of the nitrate absorb 42·50 grammes of the gas; this gradually diminishes as the temperature rises until at + 29° 20·9 grm. only are retained and the product is solid, at 79° only 0·5 grm. of NH_3 remain.—On certain peculiarities observed in spectrum researches, by M. Lecoq de Boisbaudran.—On the preparation and properties of oxymalcic acid, by M. E. Bourgoin.—On the acid derivatives of napthylamine, by M. D. Tommasi.—On the different propylenic chlorides. A classification of the absorption-bands of chlorophyll; accidental bands, by M. J. Chautard. The author so calls the bands produced by the action of acids, alkalies, or other re-agents upon normal chlorophyll.—Observations on the regulation of the magnetic compass, by M. Caspari.—Experimental Researches on the influence of barometric changes on life, tenth note, by M. P. Bert.—Mineralogical determinations of the true meteoric irons (Holosidères) in the Museum, by M. Stan. Meunier. During the meeting an election to the vacant seat of the late M. le Comte Jaubert (Academecien libre) took place. M. de la Gournerie obtained 44; M. Bréguet, 9; M. Sedillot, 5; M. Jacqmin, 2; and M. du Moncel, 1 vote. M. de la Gournerie was accordingly declared elected.

DIARY

THURSDAY, May 29.

Royal Society, at 8.30.—Croonian Lecture on Muscular Irritability after Systematic Death: Dr. B. W. Richardson
Society of Antiquaries, at 8.30.—Ballot for election of Fellows.
Royal Institution, at 3.—Light: Prof. Tyndall.

FRIDAY, May 30.

Royal Institution, at 9.—On the Radiation of Heat from the Moon: The Earl of Rosse.
Horticultural Society, at 3.—Lecture.

SATURDAY, May 31.

Royal Institution, at 3.—The Historical Method: John Morley.
Geologists' Association.—Excursion to Finchley.

MONDAY, June 2.

Entomological Society, at 7.
Royal Institution, at 2.—General Monthly Meeting.

TUESDAY, June 3.

Anthropological Institute, at 8.—On a ready method of measuring the Cubic Capacity of Skulls: Prof. Busk, F.R.S.—Flint Implements from St. Vincent's: Prof. Rolleston, F.R.S.—Copy of a Mural Inscription in large Samaritan Characters from Gaza: Rev. D. I. Heath.—Strictures on Darwinism, Part II.: the Substitution of Types: H. H. Howorth.
Zoological Society, at 8.30.—The Antelopes of the genus *Gazella* and their Distribution: Sir Victor Brooke, Bart.—The Birds of the Philippine Islands: Viscount Walden.
Royal Institution, at 3.—Roman Archæology: J. H. Parker.

WEDNESDAY, June 4.

Microscopical Society, at 8.

THURSDAY, June 5.

Chemical Society, at 8.—On the Dioxides of Calcium and Strontium: Sir John Courcy, Bart.—On Iodine Monochloride: J. B. Hannay.—A new Ozone Generator will be exhibited by Mr. T. Wills.
Linnean Society, at 8.
Royal Institution, at 3.—Light: Prof. Tyndall.

BOOKS RECEIVED

English.—The Art of Grafting and Budding: C. Baltet (W. Robinson).—Elementary Crystallography: J. B. Jordan (T. Murby).—The Noaic Deluge: S. Lucas (Hodder and Stoughton).—British Rainfall, 1872: G. J. Symons (E. Stanford).—On Coal at home and abroad: J. R. Leifchild (Longmans).—The Olive and its Products: L. A. Bernays (J. C. Beal, Brisbane).—The Philosophy of Evolution (an Actonian Prize Essay): B. T. Lowne (Van Voorst).

CONTENTS

Page
The Zoological Station at Naples. By Dr. Anton Dohrn . . 81
Gaudin's "World of Atoms" 81
Our Book Shelf 82
Letters to the Editor:—
  Science at Cambridge.—Rev. T. G. Bonney, F.G.S. 83
  Arctic Exploration.—Clements R. Markham, C.B. 83
  Forbes and Tyndall.—Principal J. C. Shairp 84
  Clerk-Maxwell's Kinetic Theory of Gases.—Prof. J. Clerk-Maxwell 85
  Additional Remarks on Abiogenesis.—Prof. Huizinga 85
  Flight of Birds.—J. Guthrie 86
Thermo-Electricity: Rede Lecture at Cambridge. By Prof. P. G. Tait 86
On the Spectroscope and its Applications, IX. By J. Norman Lockyer, F.R.S. (*With Illustrations*) 89
Mind in the Lower Animals. By Dr. J. Lauder Lindsay . . . 91
Notes 92
Scientific Serials 95
Societies and Academies 95
Diary 96
Books Received 96

Errata.—P. 64, col. 1, line 13 from bottom, for "drift" read "draft." Col. 2, line 14 from top, for "unnecessary" read "necessary."

© 1873 Nature Publishing Group